

REMARKS

In response to the Final Office Action mailed August 19, 2008, Applicant respectfully requests reconsideration based on the amendments and following remarks contained herein. Applicant respectfully submits that the claims as presented herein are in condition for allowance.

Claims 1, 4-6, 15 and 20 are pending in the present application. Claims 2-3, 7-14 and 16-19 were previously canceled. Claims 1, 15 and 20 have been amended.

No new matter has been added; the amendments have been made for purposes of overcoming the Examiner's objection to claims 1, 15 and 20, as discussed below, rather than to overcome the rejections for patentability.

Applicant acknowledges that Rotzoll (U.S. Patent No. 6,806,458, hereinafter "Rotzoll") and Bock (U.S. Patent No. 6,707,410, hereinafter "Bock") are prior art as applied to the present invention in the pending Office Action. Applicant respectfully notes, however, that the present invention was invented independently and without knowledge of the Rotzoll or Bock patents or any publications thereof in the United States.

Applicant respectfully requests reconsideration of claims 1, 4-6, 15 and 20 based upon at least the following remarks.

Claim Objections

Claims 1, 15 and 20 stand objected to for lack of antecedent basis for the limitations "a first shutter control signal" and "a second shutter control signal". Specifically, the Examiner asserts on page 5 of the Office Action that the specification does not teach a first and second shutter control signal.

Applicant respectfully notes that claims 1, 15 and 20 have been amended to recite "a shutter control signal" and "a subsequent shutter control signal" in place of "a first shutter control signal" and "a second shutter control signal", respectively, to more clearly recite that the "second" shutter control signal is temporally subsequent to, i.e., comes after, the "first" shutter control signal. Support for the amendments can be found at least at page 12, lines 11-13 of the

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specification, which discloses that “the comparator 1122 maintains the 1-bit digital signal...until the next shutter control signal CSH is applied...” (emphasis added).

Therefore, it is respectfully requested that the objection to claims 1, 15 and 20 be withdrawn.

Claim Rejections Under 35 U.S.C. § 103

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art and that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

Claims 1 and 4-6 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Rotzoll in view of Bock. The Examiner states that Rotzoll discloses all of the elements of the abovementioned claims except “a switch”, which the Examiner further states is disclosed primarily in FIG. 3, column 1, line 54- column 2, line 8, column 3, lines 61-64 and column 9, lines 49-58. Applicant respectfully traverses for at least the following reasons.

Applicant respectfully disagrees with the Examiner’s response to Applicant’s previous arguments (pages 2-5 of the Office Action), as well as to the maintained 103(a) rejections of the claims. Specifically, In Rotzoll, the four comparator outputs directly supply their respective edge information signals (Ex+, Ex-, Ey+ and Ey-) to the processing means (400), (see, e.g., FIGS. 4 and 6A, as well as column 9, lines 49 - 58).

In contrast and in accordance with the present invention, as recited in claim 1 (and similarly in claim 15, discussed below), the latch type comparator (e.g., 1122 in FIGS. 2) compares the analog signal of the (1121) photocell and an analog signal of a photocell (1131) of an adjacent pixel, generates a 1-bit digital signal having a value of the compared result and maintains the 1-bit digital signal generated by the comparison until the next shutter control signal

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(CSH) is applied, and thus a separate shutter structure is not required (see, e.g., page 12, lines 11 – 14 of the instant application).

Thus, neither Rotzoll nor Bock, alone or in combination, teach or suggest “a latch type comparator which compares the analog signal of the photocell and an analog signal of a photocell of an adjacent pixel, generates a 1-bit digital signal having a value of the comparison and maintains the 1-bit digital signal generated by the comparison until a subsequent shutter control signal is received”, as recited in claim 1.

Therefore, it is respectfully submitted that independent claim 1, including claims depending therefrom, i.e., claims 4-6, define over the cited references.

Accordingly, it is respectfully submitted that the rejection of claims 1 and 4-6 under 35 U.S.C. § 103(a) be withdrawn.

Claims 15 and 20 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Rotzoll in view of Bock and further in view of Arias-Estrada (U.S. Patent No. 6,253,161, hereinafter “Estrada”). The Examiner states that Rotzoll discloses all of the elements of claims 15 and 20 except “a switch” and “a shutter control circuit”, which the Examiner further states is disclosed primarily in FIG. 3 of Bock (the switch) and column 9, lines 20-34 of Estrada (the shutter control circuit). Applicant respectfully traverses for at least the following reasons.

As described above with reference to claim 1, Rotzoll Bock, and/or Estrada, alone or in any combination thereof, fail to teach or suggest that the photocell receives or that comparator 1122 maintains the 1-bit digital signal (COMO12) until the next shutter control signal (CSH) is applied, thereby eliminating a need for a separate and additional shutter structure in the present invention, as disclosed in independent claims 15 and 20, described at least at page 12, lines 11-14 and shown in FIGS. 2, 3 and 5 of the instant application as filed.

In addition, Applicant respectfully submits that Estrada fails to cure the deficiencies cited above (and in page 13 of the Office Action) with respect to Rotzoll and/or Bock. Specifically, Estrada does not teach or suggest a shutter control circuit for generating a shutter control signal corresponding to the shutter control information signal, which may not only be a signal on a period in which the shutter must be turned on but also a simple start signal for indicating a time to be operated, of the image processor of the present invention (see e.g., page 13, lines 10 - 19).

More specifically, the external circuitry of Estrada is controlled by the signal (sum_p), in which only a global voltage (which corresponds to a mean level of all pixels) is kept to set an electrical iris to regulate an amount of light received by the sensor (see, e.g., column 9, lines 20-34 of Estrada).

In contrast and in accordance with the present invention, the shutter control circuit generates a shutter control signal based on the shuttle control information signal of the image processor.

Therefore, neither Rotzoll nor Bock nor Estrada, alone or in any combination thereof, teach or suggest “a latch type comparator which...maintains the 1-bit digital signal generated by the comparison until a subsequent shutter control signal is received...and a shutter control circuit which generates at least one of the shutter control signal and the subsequent shutter control signal based on the shutter control information signal of the image processor” (claim 15) or “a latch type comparator which ...maintains the 1-bit digital signal generated by the comparison until a subsequent shutter control signal is received...and a shutter control circuit which generates at least one of the shutter control signal and the subsequent shutter control signal based on the shutter control information signal of the image processor, wherein the at least one of the shutter control signal and the subsequent shutter control signal comprises a first signal based on a period in which the shutter is turned on and a second signal based on an initial operation of the image processor” (claim 20).

Thus, it is respectfully submitted that claims 15 and 20 define over the cited references. Accordingly, it is respectfully submitted that the rejection of claims 15 and 20 under 35 U.S.C. § 103(a) be withdrawn.

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Conclusion

In view of the foregoing remarks distinguishing the prior art of record, Applicant submits that this application is in condition for allowance. Early notification to this effect is requested. The Examiner is invited to contact Applicant's Attorneys at the below-listed telephone number regarding this Amendment or otherwise regarding the present application in order to address any questions or remaining issues concerning the same. If there are any charges due in connection with this response, please charge them to Deposit Account 06-1130.

Respectfully submitted,

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